REMARKS

Claims 1-33 are pending in this application. By this Amendment, claims 1, 7, 12, 18, 23 and 29 are amended for clarity. Support can be found, for example, in Applicants' Figs. 14 and 16 and pages 37-41 of the specification. No new matter is added.

Applicant appreciates the courtesies shown to Applicant's representative by Examiners Leiva and Thai in the November 28 personal interview. Applicant's separate record of the substance of the interview is incorporated into the following remarks.

I. Pending Claims 1-33 Define Patentable Subject Matter

The Office Action rejects claims 1-33 under 35 U.S.C. §103(a) over U.S. Patent No. 5,835,096 to Baldwin in view of U.S. Patent No. 6,599,194 B1 to Smith et al. (Smith). This rejection is respectfully traversed.

A. Independent Claims 1, 12, and 23

As set forth in Applicants' prior response, claim 1 recites, *inter alia*, means which transforms a depth value of each pixel of an original image into a second depth value formed of lower bits I to J which are positioned lower than the most significant bit of the depth value and above the lowermost bit, wherein the bits I to J are an intermediate set of bits, obtained depending on a focus position of a virtual camera, and are below the uppermost bit and above the lowermost bit. Independent claims 12 and 23 recite similar features. These features are supported, for example, by Applicant's Fig. 14 and pages 37, 38, 40 and 41 of the specification.

Examiner Leiva requested clarification of what was being "transformed" by Applicant's claimed subject matter. Independent claims 1, 12, and 23 are amended for clarity to specify that bits I to J are obtained depending on a focus position of a virtual camera. This is supported, for example, by Applicant's page 37, line 22 to page 38, line 11 and page 40, line 5 to page 41, line 1 and illustrated in FIGS. 14 and 16.

As discussed during the personal interview, Baldwin merely transforms from a large bit form (such as 24) to a lower bit form (such as 16) by truncating all higher significant bits. Accordingly, regardless of the location of the focus of the image, bits b0 to b15 will be retained. That is, Baldwin specifically recites in the table on col. 24 that the start bit for the depth value is bit b0. Thus, Baldwin teaches that the transformed bit set always includes the lowermost bit.

However, as shown and described in Applicant's noted passages, an original depth value defined with a certain number of bits (such as 4 bits as shown for Z in FIG. 16) is transformed or converted into an intermediate lesser subset of bits I to J (such as 2 bits as shown for Z2 in FIG. 16 taken from the intermediate two columns of Z). As opposed to Baldwin which always transforms or converts to the same 8 bits, Applicant's intermediate set of bits is dependent on the focus position of a virtual camera. That is, the subset of bits chosen can shift depending on the focus position in the depth. This transforms the depth value into a value presented with a reduced number of bits representing bits near the focal point. With this redefined depth value Z2, defocus can be accurately controlled by setting of alpha values of each pixel corresponding to the second depth value. For example, the degree of defocus can be controlled by using alpha values which are partitioned with multi-step thresholds only relating to objects that are near the focus point of the virtual camera as shown in Fig. 16. This reduces processing load because all objects do not need to be alpha processed, and improves image quality as objects near the focal point are processed and defocused.

Baldwin always transforms into a lower bit count that starts at bit b0 and fails to appreciate the benefits of a system in which intermediate bits I to J are obtained depending on the focus position of the virtual camera to improve image quality by accurately controlling the degree of focusing for objects located near the focus of a virtual camera.

Smith fails to overcome the deficiencies of Baldwin with respect to independent claims 1, 12, and 23. Accordingly, these claims and claims dependent therefrom distinguish over Baldwin and Smith.

B.   Independent Claims 7, 18, and 29

As set forth in Applicants' prior response and during the personal interview, independent claim 7 is directed to a game system that generates an electronic image using, *inter alia*, (1) means which sets <u>bits M to N</u> as an index number is a first lookup table to transform the image into a third image information; (2) means which sets <u>bits K to L</u> as an index number in a second lookup table to transform the image into fourth image information; and (3) means which determines second image information <u>formed of the bits I to J</u> in the image based on the third and fourth image information, where (where $K \geq I \geq L > M \geq J \geq N$). As discussed during the interview, this specific mathematical relationship (such as shown in Applicants' Figs. 17 and 21) improves image quality, such as by improving focusing/defocusing based on depth <u>relative to the point of view</u>.

Examiner Leiva during the personal interview also requested clarification of claims 7, 18 and 29. These claims are amended similar to the claims above to clarify that bits I to J are obtained <u>depending on a focus point of a virtual camera</u>. Similar to the claims above, an original depth value defined with a certain number of bits (such as 24 bits as shown for Z in FIG. 17) is transformed or converted into an intermediate subset of bits I to J (such as 8 bits as shown for Z2 in FIG. 17 taken from the intermediate columns of Z). However, as opposed to Baldwin which always transforms or converts to the same 8 bits (starting at bit b0), Applicant's intermediate set of bits is <u>dependent</u> on the focus position of a virtual camera.

The Office Action alleges in paragraph 10 that Baldwin uses "concepts" such as interpolation and alpha blending and refers to <u>general</u> transformation of first and second images. During the interview, it was further explained to Applicant's representative by

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Examiner Leiva that alpha blending is known. However, this impermissibly distills the detailed inventive features into the general subject matter of "alpha blending." *W.L. Gore & Assoc., Inc. v. Garlock, Inc*, 721 F.2d 1540, 220 USPQ 330 (Fed. Cir. 1983, *cert. denied*, 469 U.S. 851 (1984). Moreover, this fails to consider and give weight to <u>all of the limitations</u> as required. *Ex parte Graselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.* 738 F.2d 453 (Fed Cir. 1984).

Baldwin fails to teach or suggest the relationship claimed, and fails to appreciate problems overcome by such a relationship, such as a reduced processing load and improved image quality. Accordingly, one of ordinary skill in the art, even in light of general knowledge of alpha blending, would not have been led to "pick and choose" the specific features recited absent impermissible hindsight.

That is, Baldwin always transforms into a lower bit count that starts at bit b0 and fails to appreciate the benefits of a system in which intermediate bits I to J are obtained depending on the focus position of the virtual camera. Smith fails to overcome deficiencies of Baldwin.

Accordingly, independent claims 7, 18 and 29 and claims dependent therefrom distinguish over Baldwin and Smith.
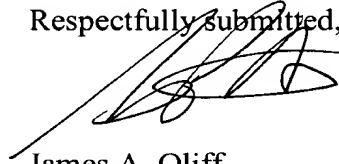
Withdrawal of the rejection is respectfully requested.

II.   Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-33 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:SPC/ccs

Attachment:
Petition for Extension of Time

Date: December 17, 2007

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